

Modeling Based Decision Support Environment, Phase II

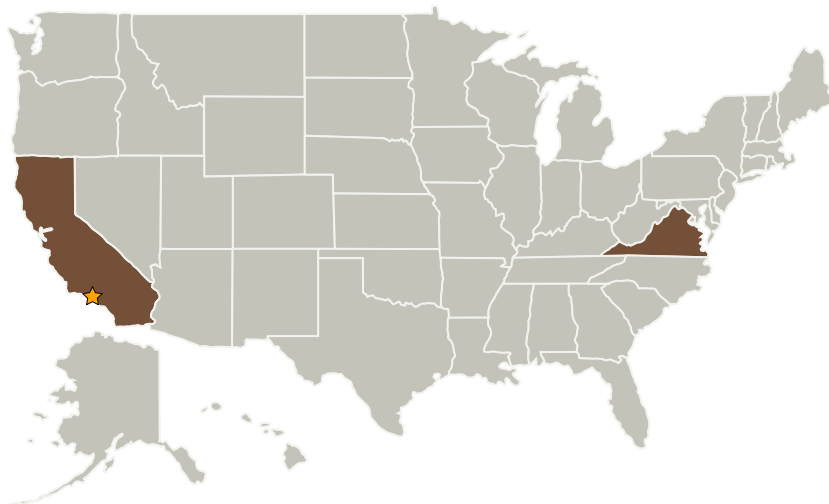
Completed Technology Project (2005 - 2007)



Project Introduction

Phoenix Integration's vision is the creation of an intuitive human-in-the-loop engineering environment called Decision Navigator that leverages recent advances in multi-dimensional visualization technology, state-of-the art optimization algorithms, and parallel processing capability. The visualization displays help designers understand key trends and trade-offs, follow the progress of the optimization algorithm, and interact with and guide the algorithm so as to make decisions regarding promising designs. This tool is fundamentally different from traditional optimization tools because of its interactive nature. Phase I research proved the feasibility of the Decision Navigator concept by integrating an optimization engine with multi-dimensional visualization tools and then integrating the combination into the Phoenix Integration design environment known as ModelCenter. This Phase II proposal builds upon the Phase I proof of feasibility study and completes the concept as a practical commercial decision support tool. Key technical elements added in Phase II include the ability to collaborate with other users, the ability to manage risk and uncertainty, and interactive "wizards" that will help users accomplish common tasks. The Decision Navigator will be a critical link in exercising NASA mission models, trade studies, system and investment analysis, and program and technology planning.

Primary U.S. Work Locations and Key Partners



Modeling Based Decision Support Environment, Phase II

Table of Contents

Project Introduction	1
Primary U.S. Work Locations and Key Partners	1
Organizational Responsibility	1
Project Management	2
Technology Areas	2

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Jet Propulsion Laboratory (JPL)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Modeling Based Decision Support Environment, Phase II

Completed Technology Project (2005 - 2007)



Organizations Performing Work	Role	Type	Location
★ Jet Propulsion Laboratory(JPL)	Lead Organization	NASA Center	Pasadena, California
Phoenix Integration	Supporting Organization	Industry	Blacksburg, Virginia

Primary U.S. Work Locations

California	Virginia
------------	----------

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX11 Software, Modeling, Simulation, and Information Processing
 - └ TX11.5 Mission Architecture, Systems Analysis and Concept Development
 - └ TX11.5.2 Tools and Methodologies for Performing Systems Analysis